CLAIMS

1. A device for regulating the flow cross section in the cooling air inflows of a bulk material grate cooler for cooling hot bulk material such as cement clinker, for example, with a regulator housing (11) which is integrated into the cooling air inflow (10) below the cooling grate and in which a control element (12) is moved in such a way that an increase in the flow rate in the region of the control element and, associated therewith, an incipient increase in the cooling air flow quantity bring about a reduction in the free flow cross section, and vice versa, characterized by the following features:

a) in the regulator housing (11) through which cooling air (10) supplied flows, an inner body (12) serving as the control element, which can be moved translatorily by the cooling air flow, is guided displaceably counter to the action of a restoring force,

b) with increasing height inside the regulator housing (11) of the inner body (12) against which the cooling air flows, the free flow cross section of the regulator housing remaining for the cooling air (10) is reduced, and vice versa.

2. The regulating device as claimed in claim 1, characterized in that the regulator housing (11) has one or more opening(s) (15) distributed over the length or height and around the periphery, the cooling air flowing into the interior of the regulator housing (11) through this/these opening(s) and flowing out into the cooling grate on the upper side (16) of the housing, which is flanged onto the lower side of the cooling

grate, and axial displacement of the inner body (12) varying the flow cross section of the opening(s) (15) flowed through by cooling air.

3. The regulating device as claimed in claim 2, characterized in that the at least one cooling air flowthrough opening of the regulator housing has a spherically polygonally curved contour or border.

4. The regulating device as claimed in claim 1, characterized in that the regulator housing (11) has a conical cross-sectional narrowing extending in the flow direction, and in that the inner body (12) is arranged in the region of the housing cone (22), axial displacement of the inner body (12) causing the free flow cross section between the inner body edge and the housing cone (22) to change.

5. The regulating device as claimed in claims 1 to 4, characterized in that the cross section of the regulator housing (11) and the periphery of the inner body (12) are round or polygonal.

6. The regulating device as claimed in claim 1, characterized in that the regulating characteristic of the regulating device is settable and variable by means of changing the preloading force of at least one restoring spring (18).

7. The regulating device as claimed in claim 6, characterized in that the restoring spring (18) is a helical spring which is arranged around the regulator housing spindle (13) and the end of which facing away from the inner body (12) is supported on a control element (20, 24) which is screwed adjustably onto the threaded end of the spindle (13) for the purpose of setting/changing the spring preloading force.

8. The regulating device as claimed in one of the preceding claims, characterized in that the inner body (12) is mounted rotatably at its bush (17) on the regulator housing spindle (13) and is designed as a vane wheel for the purpose of bringing about rotation of the inner body driven by the cooling air flow (10) guided through the regulator housing (11).

9. The regulating device as claimed in one of claims 1 to 8, characterized in that that surface of the inner body (12) acted on by the cooling air has cutouts (19) such as perforations etc. so that a minimum cooling air flow is also maintained when the inner body reaches its highest position.

10. The regulating device as claimed in one or more of claims 1 to 9, characterized in that the cooling air quantity regulating devices (11) arranged below the cooling grate of a bulk material cooler are arranged both on stationary and on moving zones of the cooling grate (27 to 29).